--8. A method for differentiating the seeds of the plant species of *Cyamopsis tetragonolobus* and *Ceratonic siliqua* from each other or other seeds based on their different rDNA, said method comprising the steps of:

i) germinating seeds of a plant to form germinated seeds;

ii) extracting DNA from the germinated seeds to form extracted DNA;

iii) amplifying the extracted DNA using primers ITS2 (SEQ ID NO:4), ITS3 (SEQ ID NO:2), ITS4 (SEQ ID NO:3) and ITS5 (SEQ ID NO:1) to form rDNA amplification products; and

iv) detecting the rDNA amplification products, thereby differentiating the seeds of the plant species of *Cyamopsis tetragonolobus* and *Ceratonic siliqua* from each other or other seeds.

9. The method according to claim 8 wherein said primers are one or more of the pairs ITS5/ITS2 (SEQ ID NO:1/SEQ ID NO:4) and ITS3/ITS4 (SEQ ID NO:2/SEQ ID NO:3).

10. The method according to claim 8 further comprising the steps of:

v) sequencing the rDNA amplification products; and

vi) comparing the sequenced rDNA to one or more of carob tree sequence AJ245575 (SEQ ID NO:8), carob tree sequence AJ245576 (SEQ ID NO:10), guar plant sequence AJ245577 (SEQ ID NO:9) and guar plant sequence AJ245578 (SEQ ID NO:7).

11. The method according to claim 9 further comprising the steps of:

v) digesting the rDNA amplification products with a restriction endonuclease to form restriction fragments of the rDNA;

vi) resolving the restriction fragments of the rDNA; and

vii) comparing the resolved restriction fragments of the rDNA to restrictions fragments from one or more of control guar and carob tree DNA digested with the same restriction endonuclease.

12. The method according to claim 11 wherein said restriction endonuclease is selected from the group consisting of: *Bcn*I, *Cla*I, *Hae*III, *Xho*I and *Sma*I.

13. The method according to claim 11 wherein the restriction fragments of the rDNA are resolved by electrophoresis in agarose gels.

14. The method according to claim 13 wherein the resolved digestion products are visualized by staining with a DNA detection reagent selected from the group consisting of: ethidium bromide and a fluorescent nucleic acid gel stain.

15. A method for specifically distinguishing guar seeds from other seeds, said method comprising the steps of:

i) germinating seeds of a plant to form germinated seeds;

ii) extracting DNA from the germinated seeds to form extracted DNA;

iii) preparing guar-specific primers that are identical to a portion of guar plant sequence AJ245577 (SEQ ID NO:9) or AJ245578 (SEQ ID NO:7) but different from portion of carob tree sequence AJ245575 (SEQ ID NO:8) or AJ245576 (SEQ ID NO:10) that aligns with the portion of guar plant sequence

iv) amplifying the extracted DNA from step ii using the guar-specific primers from step iii to form rDNA amplification products; and

v) detecting the rDNA amplification products, thereby specifically distinguishing guar seeds.

16. The method according to claim 15 wherein said guar-specific primers are PG21 (SEQ ID NO:4) and PG22 (SEQ ID NO:6).

17. A method for detecting the presence of guar gum (E 412) alone or mixed with locust bean gum (E 410) in a gum sample, said method comprising the steps of:

i) extracting DNA from a gum sample;

ii) amplifying the DNA using guar-specific primers that are identical to a portion of guar plant sequence AJ245577 (SEQ ID NO:9) or AJ245578 (SEQ ID NO:7) to form amplified DNA;

iii) detecting the amplification products in the amplified DNA that are specific to guar.

18. A method for obtaining extracted DNA from gum samples comprising one or more of guar gum (E 412) and locust bean gum (E 410), comprising the steps of:

i) contacting a gum sample comprising DNA and one or more of guar gum (E 412) and locust bean gum (E 410) with an aqueous solution to form an extraction mixture;

ii) agitating the extraction mixture at a temperature between 0°C and 100°C for a time period sufficient to permit extraction of DNA from the gum sample into the aqueous solution;

iii) separating the extraction mixture to obtain an aqueous solution containing extracted DNA and another phase; and

iv) recovering a sample of the aqueous solution containing extracted DNA.

19. The method according to claim 18 wherein said aqueous solution is a buffered aqueous solution.

20. The method according to claim 18 wherein said aqueous solution further comprises acetonitrile or ethanol.

21. The method according to claim 18 wherein the extraction mixture is agitated at room temperature.

22. The method according to claim 18 wherein the extraction mixture is separated by decantation.

23. The method according to claim 18 wherein the extraction mixture is separated by centrifugation.

24. The method according to claim 23 wherein the centrifugation is at 15,000 x g.

25. The method according to claim 18 further comprising the step of amplifying the extracted DNA using PCR.

26. The method according to claim 25 wherein said amplification utilizes one or more primers having a sequence that is SEQ ID NO:4, SEQ ID NO:6, a portion of SEQ ID NO:7 or a portion of SEQ ID NO:9.--